PORSF
11.3.18.1 V14

Delta
Environmental
Consultants, Inc.

Solving environment-related business problems worldwide

www.deltaenv.com

7150 SW Hampton • Suite 220
Tigard, Oregon 97223 USA

503.639.8098 800.477.7411
Fax 503.639.7619

November 19, 2003
Project PTKM-01L-1

Mr. Don Pettit
Oregon Department of Environmental Quality
2020 SW Fourth Ave, Suite 400
Portland, OR 97201

RE: Work Plan for Additional Remedial Investigation Activities for KMLT Linnton Terminal Portland, Oregon

Dear Mr. Pettit:

Delta Environmental Consultants, Inc. (Delta) has prepared this letter on behalf of Kinder Morgan Liquid Terminals, LLC (KMLT) to present a work plan to detail proposed additional remedial investigation (RI) activities for the above-referenced KMLT site (Figure 1). This additional assessment work is proposed to meet the request of the Oregon Department of Environmental Quality (DEQ) for further definition of the extent of separate-phase hydrocarbons (SPH) in the subsurface in the vicinity of Well MW-16. This request was made during a meeting on August 28, 2003.

SCOPE OF WORK

The scope of work for this additional phase of the RI to achieve the above stated goal consists of four tasks. These tasks are: work plan preparation; access agreement negotiation; push probe sampling and well installation; and data memorandum preparation.

ACCESS AGREEMENT NEGOTIATION

Prior to start of field activities, an access agreement must be obtained for the neighboring railroad owned property. Delta will contact the Portland & Western Railroad to discuss our intention of collecting subsurface soil and groundwater samples from their property and coordinate obtaining an access agreement.

PUSH-PROBE SAMPLING AND WELL INSTALLATION

The proposed assessment work will consist of one day of push-probe borings to collect soil and shallow groundwater samples at up to four locations in the vicinity of Well MW-16 with follow-up installation of a groundwater-monitoring well. Two of the proposed push-probe locations are offsite in the up-gradient direction of Well MW-16. These two locations are located on railroad property. The proposed locations of the push-probes are shown on Figure 2. The location of the proposed monitoring well will be determined based upon the data collected during the push-probe activity.

The assessment will include the use of a push-probe rig to collect soil and shallow groundwater samples from an estimated three to four locations and the use of a hollow-stem auger drill rig to install a groundwater monitoring well. The actual number of push-probe locations and the depth of sampling completed will depend on the conditions encountered at the time of the field activities. Based upon data from the push probes, a soil boring will be completed using a hollow-stem auger drill rig.

A monitoring well will be installed in the soil boring. The monitoring well will be constructed using 2-inch diameter Schedule 40 PVC casing and well screen with 0.010-inch slots. The final completion depth of each well will be determined by the conditions encountered during drilling. Delta anticipates that the wells will be no deeper than 30 feet below grade. A sand pack will be placed in the annular space from the bottom of the boring to approximately two feet above the top of the screen interval. A sanitary seal will be installed on top of the sand pack in the annular space. This seal will consist of a layer of bentonite pellets and layer of cement. The wells will be secured with lockable well caps. The wellheads will be protected with traffic-rated utility monuments.

It is anticipated that two soil samples will be collected from each of the push-probe borings and the hollow-stem auger soil boring for laboratory analysis. Soil samples will be analyzed for hydrocarbon identification: total petroleum hydrocarbons (TPH-HCID) with quantification if TPH is detected; benzene, toluene, ethylbenzene, and xylenes (BTEX), and naphthalene by USEPA Method 8021B; and polynuclear aromatic hydrocarbons (PAHs) by USEPA Method 8270M-SIM.

Groundwater samples will be collected from each push-probe boring location and the newly installed monitoring well and analyzed for BTEX and naphthalene by EPA Method 8021B, and PAHs by USEPA Method 8270M-SIM. The actual volume of the groundwater collected from the push-probe borings may limit the analytical analysis performed on those samples.

All drilling, soil sampling and groundwater sampling will follow the protocols presented in the DEQ-approved RI Work Plan for the site.

The soil and groundwater samples will be transported to North Creek Analytical Laboratory (NCA) of Beaverton, Oregon for quantitative analysis. Analytical services will be billed directly to KMLT.

PREPARATION OF DATA MEMORANDUM

Delta has not received final comments from the DEQ on the draft RI report submitted October 2002 with the comment response document submitted February 2003. Therefore, Delta will prepare a memorandum documenting the proposed investigation results. The data memorandum will include a description of field activities and findings, tabulated summary of soil and groundwater analytical results, and a map showing the sample collection locations. This data will be incorporated into the final RI report for the site once Delta has received final comments from the DEQ.

SCHEDULE

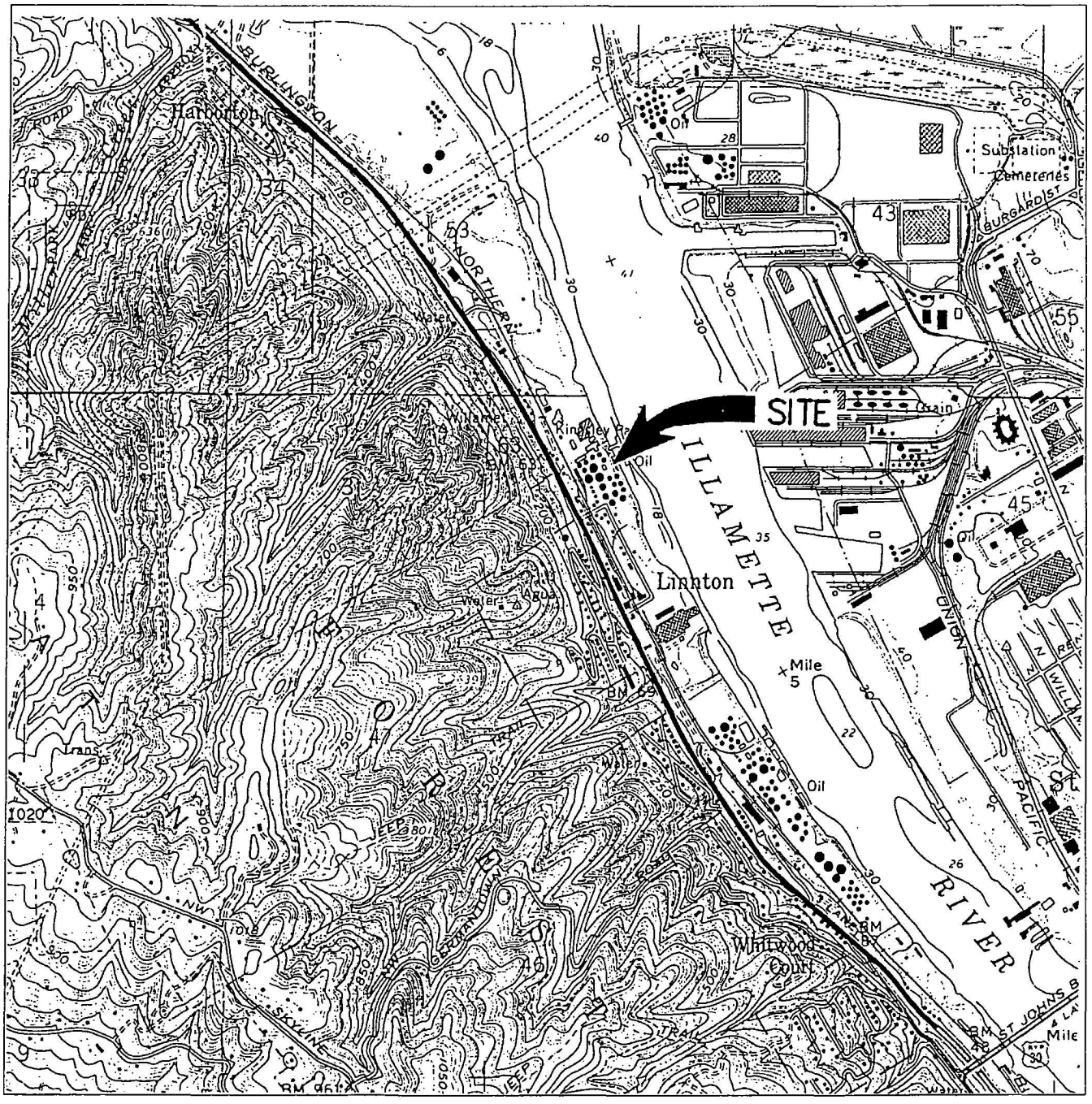
Once Delta has received approval from the DEQ, Delta will schedule the fieldwork. Delta anticipates that the field work will be completed during December 2003 – January 2004. The Data Memorandum will be submitted to DEQ within four weeks after Delta receives analytical data from the laboratory. Please call the undersigned if you have any questions regarding the contents of this work plan.

Sincerely,
Delta Environmental Consultants, Inc.

Kelly A. Kline, R.G.
Senior Geologist

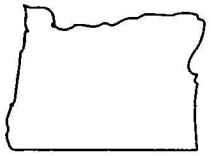
R. Scott Miller, P.E.
Principal Engineer

Attachment: Figure 1 – Site Location Map
Figure 2 – Site Map with Proposed Geoprobe Locations



REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
LINNTON, OREGON, 1961
PHOTOREVISED 1984

SCALE 1 : 25,000



QUADRANGLE LOCATION

FIGURE 1

SITE LOCATION MAP

Kinder Morgan Liquid Terminals LLC
Linnton Terminal
11400 NW St. Helens Road
Portland, Oregon

PROJECT NO. PTKM-01L-1	DRAWN BY CRF
FILE NO.	PREPARED BY CRF
REVISION NO.	REVIEWED BY

Delta
Environmental
Consultants, Inc.

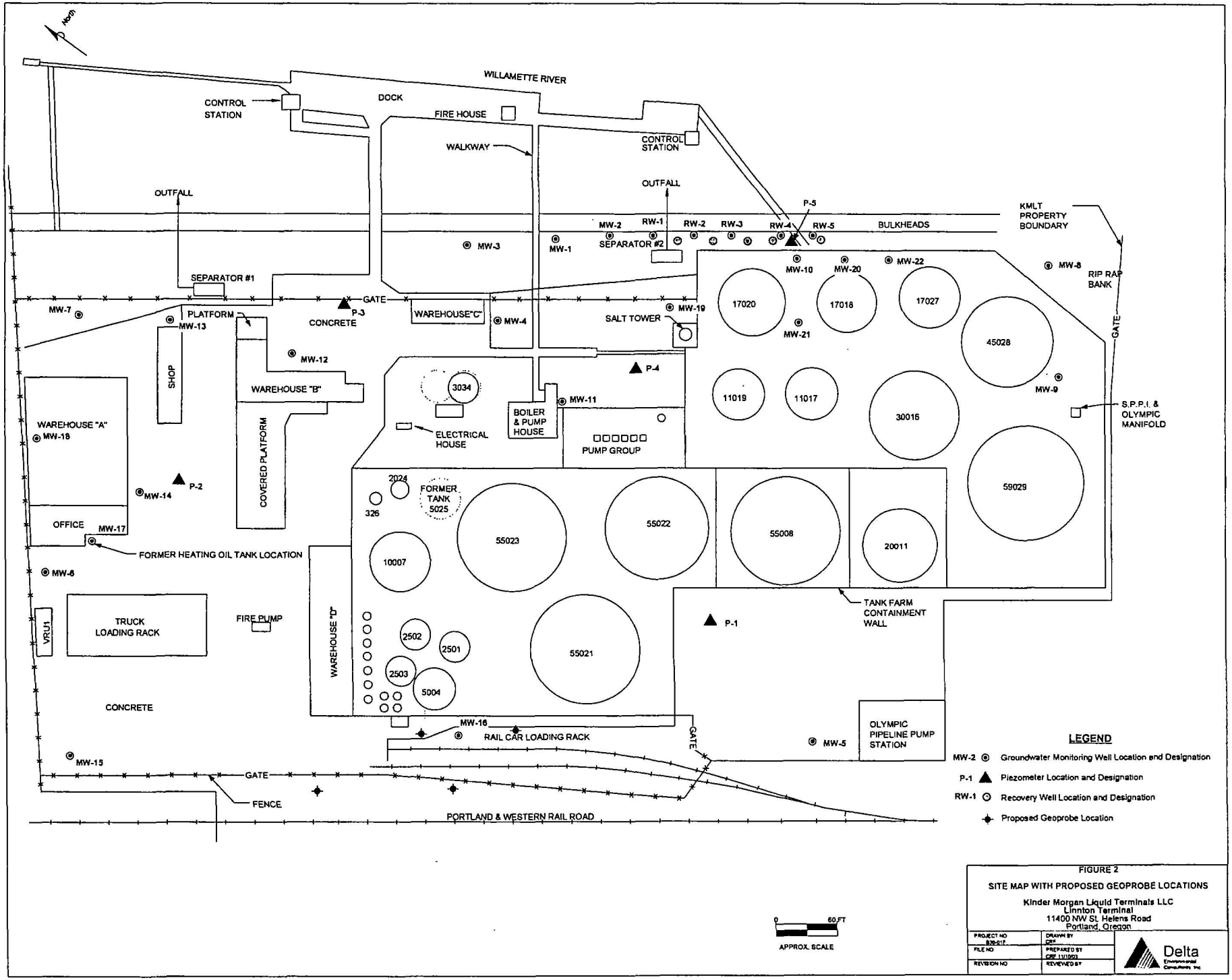


FIGURE 2

SITE MAP WITH PROPOSED GEOPROBE LOCATIONS

Kinder Morgan Liquid Terminals LLC
Linnton Terminal
11400 NW St. Helens Road
Portland, Oregon

PROJECT NO 830-01F	DRAWN BY CRF
FILE NO	PREPARED BY CRF 11/1/07
REVISION NO	REVIEWED BY

Delta Environmental Consultants, Inc.